

Distributions Worksheet:

1. a) 6 Kentucky Derby winning times are 157 seconds

b) 32 Kentucky Derby winning times between 125 and 129 seconds

c) 40 Kentucky Derby wins

d) a winning time of the Kentucky derby of 158 seconds

e) a group of winning times between 125 and 129

2. similarities

- Bimodal
- Skewed right (tail is on the right)
- All the same data

Differences:

- Data presentation
- Bin width

Look at the width of the bars/dots/leaves, not the way the axis is labeled

3. Use stem and leaf when it is important to get individual values easily.

- 5 Number Summary:

Maximum Value

Minimum Value

Median Value

Q_1

Q_3

- Spread of Data:

- Interval: (two numbers)

Minimum Value to Maximum value

- Range = max. value - min. value

(one number)

- Range is not very useful when we have outliers because it can give a false impression of the data set.

- Median

- Organize data from min. value to max. value

- Middle number for odd termed data set; mean of middle numbers for even termed data set

Example: find median, Q_1 , Q_3

18, 18, 19, | 20, 20, 22, | 27, 28, 30, | 31, 32, 32

$$Q_1 = \frac{19+20}{2} = 19.5 \quad \text{median} = \frac{22+27}{2} = 24.5 \quad Q_3 = \frac{30+31}{2} = 30.5$$

5 Number Summary:

Max. Value = 32
Min. Value = 18

always part of data set

Median = 24.5

$Q_1 = 19.5$

$Q_3 = 30.5$

may or may not be part of data set